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Anti-peptide antibodies recognize anti-substance P antibodies in an idiotypic fashion.

Pascual DW, Bost KL.

University of Alabama, Birmingham 35294.

A peptide (AGFGVVKPNY) was synthesized based on an RNA sequence complementary to the mRNA encoding substance P (Sub P). Antibodies against this Sub P complementary peptide (termed anti-C Pep antibodies) were produced by immunizing rats with peptide conjugated to the carrier protein, keyhole limpet hemocyanin. Antisera were then passed over a peptide conjugated affinity column to specifically purify the anti-C Pep antibodies. In a similar manner, anti-Sub P antibodies were produced in rabbits and made monospecific by affinity chromatography. Using a radioimmunoassay, 125I-anti-C Pep antibodies were found to bind anti-Sub P antibodies in a dose-dependent fashion. Control antibodies did not bind nor did they inhibit binding, suggesting that the interaction of the affinity purified antibodies was not due to the presence of constant region determinants. Ultimately, the idiotypic-anti-idiotypic nature of the anti-Sub P and anti-C Pep antibodies was demonstrated using a radioimmunoassay for Sub P. Anti-C Pep antibodies competed like unlabeled Sub P in the ability to block 125I-Tyr8-Sub P binding to anti-Sub P antibodies, whereas control antibodies did not. We concluded, therefore, that immunizing with this pair of complementary peptides (i.e., Sub P and C Pep) generates antibodies which are anti-idiotypic.

PMID: 2485208 [PubMed - indexed for MEDLINE]

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Antipeptide antibodies that recognize a lymphocyte substance P receptor. [J Immunol. 1989]

Antiidiotypic antibodies raised against anti-prolactin (PRL) antibodies recognize the PRL receptor. [Endocrinology. 1986]

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